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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/586,361

07/18/2006

David Ezra

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EXAMINER

PRITCHETT, JOSHUA L

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/586,361	Applicant(s) EZRA, DAVID	
	Examiner JOSHUA L. PRITCHETT	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to Amendment filed April 15, 2008. Claims 1, 6 and 7 were amended as requested by the applicant.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 8, 10 and 12-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzushi (US 2002/0110651).

Regarding claims 1 and 21, Suzushi discloses an encoding surface having a micro-relief pattern over at least part thereof, the micro relief pattern producing a predetermined diffracted first image when illuminated in use, and an optically anisotropic layer provided whereby at least part of the micro-relief pattern induces local orientation of the optically anisotropic layer thereby to impose a predetermined polarization modulation thereby to produce a predetermined second polarized image when illuminated in use (para. 0026, 0029; abstract).

Regarding claims 2 and 22, Suzushi discloses the micro-relief pattern is provided on a layer in contact with the optically anisotropic layer thereby to define the encoding surface (para. 0053).

Regarding claim 3, Suzushi discloses the encoding surface is formed on the optically anisotropic layer (para. 0053).

Regarding claim 4, Suzushi discloses the encoding surface includes one or more regions having a significant diffractive effect and one or more relatively weakly diffractive regions where there is little or not diffractive effect (para. 0026).

Regarding claim 5, Suzushi discloses the encoding surface includes a plurality of area each of which having a respective orientation of the micro-relief pattern thereon defining respective optical axes of the optically anisotropic layer (para. 0026).

Regarding claim 8, Suzushi discloses the average thickness of the optically anisotropic layer and its birefringence varies with position across the device to vary the optical retardation induced thereby (para. 0053).

Regarding claim 10, Suzushi discloses the thickness of the optically anisotropic layer disregarding the micro-relief pattern is generally continuously contoured (para. 0027).

Regarding claim 12, Suzushi discloses the encoding surface is reflective over at least part of the device whereby at least part of the device is adapted to operate in reflection mode (para. 002).

Regarding claim 13, Suzushi discloses at least part of the surface of the optically anisotropic layer remote from the encoding surface is at least partially reflective (para. 0025).

Regarding claim 14, Suzushi discloses the micro-relief layer comprises a transmissive substrate and at least part of the surface thereof remote from the interface with the optically anisotropic layer is reflective (para. 0009, 0025).

Regarding claim 15, Suzushi discloses use in transmission mode (para. 0025).

Regarding claim 16, Suzushi discloses us in reflection mode (para. 0025).

Regarding claim 17, Suzushi discloses the optically anisotropic layer comprises a polymerisable liquid crystalline material (para. 0024).

Regarding claim 18, Suzushi discloses the optically anisotropic layer comprising a polymer liquid crystal material (para. 0032).

Regarding claim 19, Suzushi discloses the optically anisotropic layer is permanently preserved by a fixing process (para. 0053).

Regarding claim 20, Suzushi discloses the refractive index of the micro-relief layer is substantially equal to the ordinary or extraordinary refractive index of the optically anisotropic layer (para. 0051). If the diffraction system is not a refraction modulation system then a substantial difference in the refractive indices would create undesired reflections at the interface.

Regarding claim 23, Suzushi discloses the micro-relief pattern is formed by embossing (para. 0053).

Regarding claim 24, Suzushi discloses the micro-relief pattern is formed by UV curing of a suitable material in contact with a master (para. 0099).

Regarding claims 25-32, Suzushi discloses the use of the micro-relief pattern on various devices including optical security devices (para. 0075).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzushi (US 2002/0110651) in view of Nikolov (US 2004/0095637).

Suzushi teaches the invention as claimed but lacks reference to the thickness providing phase retardation. Nikolov teaches at least part of the optically anisotropic layer is selected having regard to the frequency of the intended illumination in use to provide phase retardation when appropriately viewed (para. 0062). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Suzushi invention include the phase retardation of Nikolov for the purpose of differentiating the propagation of light based on polarization and/or wavelength to create a different image depending on the polarization or wavelength of incident light.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzushi (US 2002/0110651) in view of Admitted Prior Art.

Suzushi teaches the invention as claimed but lacks reference to the step distance greater than the pitch dimension. Admitted Prior Art teaches the encoding surface is stepped, whereby the thickness of the optically anisotropic layer is stepped by a step distance which is substantially greater than the structure pitch dimension thereby to provide regions of respective selective retardations (current specification para. 0033). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Suzushi invention include the step distance as taught by the Admitted Prior Art for the purpose of providing polarization selectively to the encoding surface.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzushi (US 2002/0110651).

Suzushi teaches the anisotropic material varies (para. 0027) but lacks reference to linear varying. It is extremely well known in the art to have a linearly varying anisotropic material over the surface of a diffraction pattern. Official Notice is taken. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the Suzushi invention include the linearly varying anisotropic material as is known in the art for the purpose of matching a linearly shaped surface pattern.

Response to Arguments

Applicant's arguments filed April 15, 2008 have been fully considered but they are not persuasive.

Applicant argues the Suzushi reference is not anisotropic. The liquid crystal layer is not isotropic, therefore the layer is anisotropic. Evidence to support the fact an interpretation of the liquid crystal layer being anisotropic is found in Suzushi which teaches the liquid crystal layer may be changed to become isotropic (para. 0040). If a change is required to make the layer isotropic then prior to such a change the layer is anisotropic.

Applicant argues the liquid crystal material of Suzushi does not synergize creating a diffracted image and inducing polarization orientation. The liquid crystal inherently induced polarization orientation and Suzushi states the surface of the liquid crystal is diffractive (para. 0029). The examiner takes this as a teaching of a synergy of polarization orientation and diffraction.

Applicant argues there is no underlying diffractive pattern in the adhesive layer. The examiner agrees because the diffractive element is the surface of the liquid crystal (para. 0029).

Applicant argues the Suzushi reference teaches a reflective hologram while the current invention teaches a transmission hologram. This limitation is not present in the claim language and therefore this argument is not persuasive.

Applicant argues the Suzushi reference does not encode any information. This limitation is not present in the claim language therefore this argument is not persuasive.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA L. PRITCHETT whose telephone number is (571)272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joshua L Pritchett/
Primary Examiner
Art Unit 2872